Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT PERMIT NO. G-02-001
MUNICIPAL SOLID WASTE LANDFILLS
KENTUCKY
JUNE 13, 2002
JIM MORSE, REVIEWER

SOURCE DESCRIPTION: This general permit will apply to all Municipal Solid Waste Landfills that commenced construction, reconstruction or modification on or after May 30, 1991 and have a design capacity of 2.5 million cubic meters and 2.5 million megagrams. The typical MSW landfill operates by hauling waste to an open cell on the working face of the fill in a compactor truck such as those seen on city streets. The trucks are emptied and dozers are used to push the waste into a pile and compact it further. At the end of each day the cell is covered with at least six inches of earth. Many landfills also accept asbestos-containing waste which is placed in a separate section so as to avoid disturbance of the asbestos during future operations such as installation of gas collection and control systems. The asbestos-containing waste does not generate methane.

Liquids which drain through and from the waste must be collected and either shipped offsite for treatment or treated onsite. The collected liquids are often stored in one or more leachate storage tanks while awaiting further action.

Landfills also generate fugitive emissions from haul roads, stockpiles and yards as well as various other activities.

EMISSION AND OPERATING CAPS DESCRIPTION:

The largest emission from a landfill is the gas formed by decomposition of the waste contained therein. This gas is about 55% methane, 45% carbon dioxide with about 1% or less being non-methane organic compounds (NMOC). NMOC contains many hazardous air pollutants (HAPS), volatile organic compounds (VOC) and some greenhouse gases. Landfills which emit 50 megagrams or more of NMOC are required under Subpart WWW to install a collection and control system which will control 98% of the collected NMOC. A Title V permit is required because of the potential emissions of NMOC exceed major source thresholds for HAPS and because all sources subject to new source performance standards (NSPS) must have a part 70 permit.

Fugitive emissions of dust from landfill activities must be suppressed and are not allowed beyond the property line.

PERIODIC MONITORING:

No variations from Subpart WWW were made with regard to monitoring and operational restrictions at the landfills with the exception of monitoring of flares used to control NMOC which now includes requirements for daily visual observation to ensure the opacity standard in Regulation 401 KAR 63:015 is being met.

Fugitive emission sources have requirements for daily visual observation to assure compliance with Regulation 401 KAR 63:010.

The only form of monitoring associated with asbestos is to acertain that the quantity of asbestos received matches the quantity of asbestos shipped, with a provision for reporting discrepancies.

The leachate storage tanks do not require any monitoring due to the low vapor pressure of leachate.

Applicable Requirements for Emission Unit 01

CATEGORY	MONITORING ACTION	SCHEDULE	REFERENCE
Gas Collection System	Monitor gauge pressure within each gas extraction well. A negative value indicates a well is operating with a sufficient gas extraction rate.	Monthly	§60.756(a)(1)
	Monitor nitrogen concentration using Method 3C or oxygen concentration using Method 3A or 3C. Nitrogen concentration values <20% or oxygen concentration values <5% indicate well extraction rates are not causing excessive air infiltration into the landfill.	Monthly	§60.756(a)(2)
	Monitor Landfill gas temperature in extraction wells; should be <55°C(131°F), unless otherwise demonstrated that a higher temperature is appropriate. Adjustments shall be made to well to meet this performance criteria to prevent aerobic conditions within the landfill and/or subsurface fires.	Monthly	§60.756(a)(3)
	Monitor methane concentration at the landfill surface. Values <500 ppm above background indicate well extraction rates are sufficient to minimize the amount of LFG seeping out of the landfill.	Quarterly while landfill is active. Annual if no exceedances for 3 consecutive quarters in closed areas.	§60.755(c) §60.756(f)
	Monitor cover integrity. Cover repairs must be implemented as necessary.	Monthly	§60.755(c)(5)
Gas Control System	Monitor gas flow from collection system to open flare. This requirement identifies periods when gas flow has been diverted form the control device	At least once every 15 minutes. (If flare is used other than backup)	§60.756(c)(2)
	Monitor the continuous presence of a pilot flame or the flare flame for an open flare. This requirement confirms operation status of control device.	Continuous (If flare is used other than backup)	§60.756(c)(1)
	Monitor the gas flow rate to or bypass of the control device.	Monthly	§60.756(b)(2)(I)
	Secure the bypass line valve in the closed position with a car-seal or a lock-and-key configuration and perform a visual inspection of the seal or closure mechanism to ensure that the valve is closed and gas is not being by passed.	Monthly	§60.756(b)(2)(ii)

AREA	RECORD KEEPING ITEM	REFERENCE
Landfill Information	Current maximum design capacity, current amount of refuse in place and year-by year refuse acceptance rates.	§60.758(a)
Collection System Design	Plot map showing each existing and planned well in the gas collection system. Provide unique identifying labels for each well. Installation date and location of all newly installed wells per §60.755(b). Description, location, amount, and placement date of all non-degradable refuse including asbestos and demolition refuse placed in landfill areas which are excluded from LFG collection and control (unless the landfill does not choose to exclude any areas from control). Demonstration of "sufficient" density of wells, horizontal collectors or other gas extraction devices. Maximum expected gas generation flow rate as calculated in §60.755(a)(1).	§60.758(d) §60.758(d)(1) §60.758(d)(2) §60.758(b)(1)(I) §60.758(b)(1)(I)
Control System Design	Maintain records of control device vendor specifications until the control equipment is removed.	§60.758(b)
Initial Performance Test Measurements	1. For open flares not used as backup: 2.Type of flare (steam-, air-, or non-assisted) 3. All visible emission readings made during performance test 4. Heat content determination made during performance test 5. Gas flow rate or bypass measurements 6. Exit velocity determinations made during performance test 7. Continuous pilot flame or flare flame monitoring All periods when pilot flames or flare flame is absent	§60.758(b)(4)
Routine System Monitoring Parameters	1. Record the following: 2. Gauge pressure in each extraction well (monthly) 3. Nitrogen or oxygen concentration in extracted LFG (monthly) 4. Temperature of extracted LFG (monthly) 5. Methane concentrations along landfill surface (quarterly) 6. Gas flow from collection system to the control device every 15 minutes 7. Continuous presence of a flame	§60.758(c) §60.758(c)(4)
Gas Collection System Exceedances	Record all values which exceed the operation standards specified in §60.753. For the quarterly surface scan, include the reading from the subsequent month, whether or not the second reading is exceedance, and the location of each exceedance.	§60.758(c)
Gas Control System Exceedances	Record all periods of operation in which the flare flame is out	§60.758(c)(4)

REPORT/ACTION	SCHEDULE	REFERENCE
Initial Design Capacity Report		§60.757(a)
Annual NMOC Emission Rate Report (Tier 1)	Repeat once a year until a gas collection/control system has been installed. Owner is exempted from submitting reports while system is operational.	§60.757(b)
Collection and Control System Design Plan	Submit within 1 year after NMOC Emission Rate Report has a value > 50 Mg/yr.	§60.752(b)(2)(I)
Initial Control System Performance Test Report	Submit within 180 days of emission collection and control system start up per §60.8. Results can be included in the initial Annual report. Report shall include: 1. Diagram of collection system showing location of all wells, horizontal collectors, etc. and any areas excluded from control. 2. Data upon which "sufficient density" of wells, horizontal collectors, and gas mover equipment sizing are based. 3. Provisions for the control of off-site migration. 4. Information on the open flare, including: a) Flare type b) Visible emission readings c) Heat content determination d) Flow rate measurements e) Exit velocity determination	§60.757(g)
Annual Compliance Report	Submit initial report within 180 days of emission collection and control system start up. Report is due annually thereafter. Report shall include: 1. Valve and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d), (i.e., temperature, O_2 or N_2 concentrations in each well, instances when positive pressure occurs at a well head in efforts to avoid a fire). 2. Description and duration of all periods when the control device was not operating for a period exceeding one hour, and length of time the control device was not operating (see attached proposal for alternative reporting). 3. All periods when the collection system was not operating in excess of five days. 4. Location of each exceedance of the 500 ppm methane concentration during the surface scan, and the concentration recorded at each location for which an exceedance was recorded the previous month. 5. Date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b) and (c)(4) of §60.755.	§60.757(f)

REPORT/ACTION	SCHEDULE	REFERENCE
Control Equipment Removal Report	Submit report within 30 days prior to removal or cessation of control system operations. Controls can be removed after meeting all of these criteria: 1. Landfill Closure Report has been submitted 2. Control systems ware operated for at least 15 years 3 Three consecutive NMOC Emission Rate Reports with values <50 Mg/yr achieved	§60.757(c)
Closure Report	Submit a closure report to the administrator within 30 days of waste acceptance cessation.	§60.757(d)
Visual Monitoring of Control Device for Opacity Record Result of Visual Monitoring	Daily During Operation	401 KAR 52:020, Section 26
Report Exceedances of Opacity for Passive GasControl Systems	Promptly as possible upon discovery of exceedance	401 KAR 52:020, Section 26

Applicable Requirements for Emission Unit 02

Visual Monitoring of Fugitive Emission Sources	Daily During Operation	401 KAR 52:020, Section 26
Record Date and Time of Use of Dust Suppression Equipment Record Results of Visual Observations	Each Time Equipment is Used Daily	401 KAR 52:020, Section 26
Report Exceedances of Standard	Upon Discovery	401 KAR 52:020, Section 26

Applicable Requirements for Emission Unit 03

Record Dimensions and Capacity for Each Leachate Storage Tank	Once, Keep for the Life of the Tank	§ 60.116(b)

OPERATIONAL FLEXIBILITY: A landfill is allowed to operate with no restrictions on hours of operation or quantity of throughput (solid waste received).

COMMENTS:
40 CFR 60, Subpart WWW, applies to the actual landfill and governs operating practices and control of emissions.
40 CFR 61, Subpart M-National Emission Standard for Asbestos, applies to asbestos containing waste.
40 CFR 60, Subpart Kb- Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984, applies to leachate storage tanks.
401 KAR 63:015, Flares, applies to landfills using flares to control NMOC.
401 KAR 63:010, Fugitive Emissions, applies to fugitive dust from haul roads, etc.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.